

Abstract of the Disclosure

POWER SYSTEM AND WORK MACHINE USING SAME

Engineers are constantly seeking methods to reduce undesirable emissions, noise, and vibrations created by power systems. In the present invention, a power system includes at least one hydraulic cylinder that defines a first fluid volume and a second fluid volume separated from one another via a moveable plunger. Hydraulic power created within the hydraulic cylinder is converted to mechanical energy by a variable displacement hydraulic motor that is fluidly connected to at least the first fluid volume. A generator is attached to the variable displacement hydraulic motor, and produces electrical power that is stored in a power storage system. The stored power can be supplied to an electric motor that is operable to power a hydraulic pump. The hydraulic pump supplies hydraulic fluid to the hydraulic cylinder. The power system of the present invention is a relatively efficient alternative to a power system including a diesel engine that can be a source of undesirable emissions, noise and vibrations.